Configuring BaySecure FireWall-1

BayRS Version 12.10
Site Manager Software Version 6.10

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Bay Networks

Bay Networks

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About This Guide

If you are responsible for network security, you need to read this guide to learn about BaySecure™ FireWall-1, and the steps you need to take to install, configure, and activate a firewall on a Bay Networks® router.

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Obtain a Check Point FireWall-1 license	2-1
Install Check Point firewall management software	2-5
Create a firewall on the router	3-1
Enable the firewall on the router	3-4
Establish a relationship between the management station and the router	3-4
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Configure a security policy	3-11
Install the security policy on the router	3-11
Delete a firewall from the router	3-12

You will also need to consult the FireWall-1 document from Check Point Technologies.

Before You Begin

Before using this guide, you must complete the following procedures. For a new router:

- Install the router (refer to the installation guide that came with your router).
- Connect the router to the network and create a pilot configuration file (refer to *Quick-Starting Routers, Configuring BayStack Remote Access,* or *Connecting ASN Routers to a Network).*

Make sure that you are running the latest version of Bay Networks Site Manager and router software. For instructions, refer to *Upgrading Routers from Version 7–11.xx to Version 12.00.*

Conventions

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: if command syntax is **ping** *<ip_address>*, you enter **ping 192.32.10.12**
bold text	Indicates text that you need to enter, command names, and buttons in menu paths. Example: Enter **wfsm &**
	Example: Use the **dinfo** command.
	Example: ATM DXI > Interfaces > **PVCs** identifies the PVCs button in the window that appears when you select the Interfaces option from the ATM DXI menu.
italic text	Indicates variable values in command syntax descriptions, new terms, file and directory names, and book titles.
quotation marks (“ ”)	Indicate the title of a chapter or section within a book.
`screen text`	Indicates data that appears on the screen. Example: `Set Bay Networks Trap Monitor Filters`

separator (>)	Separates menu and option names in instructions and internal pin-to-pin wire connections. Example: Protocols > AppleTalk identifies the AppleTalk option in the Protocols menu. Example: Pin 7 > 19 > 20

Acronyms

GUI	graphical user interface
IP	Internet Protocol
LAN	local area network
MIB	management information base
OSI	Open Systems Interconnection
TCP/IP	Transmission Control Protocol/Internet Protocol

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Europe	33-4-92-96-69-66	33-4-92-96-69-96
Asia/Pacific	61-2-9927-8888	61-2-9927-8899
Latin America	561-988-7661	561-988-7550

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Santa Clara, CA	800-2LANWAN	408-495-1188
Valbonne, France	33-4-92-96-69-68	33-4-92-96-69-98
Sydney, Australia	61-2-9927-8800	61-2-9927-8811
Tokyo, Japan	81-3-5402-0180	81-3-5402-0173

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Europe, Middle East, and Africa	33-4-92-96-15-83
Asia/Pacific	61-2-9927-8822
Tokyo and Japan	81-3-5402-7041

Chapter 1
BaySecure FireWall-1

BaySecure™ FireWall-1 builds firewall security features into Bay Networks router software. It does this by integrating the stateful inspection module from Version 2.1 of the Check Point Software Technologies FireWall-1 software into the Bay Networks router operating system of Bay Networks BN®, ASN™ and ARN™ routers. BaySecure FireWall-1 provides all of the security features from Version 2.1 of the Check Point Software Technologies FireWall-1 software, except for user authentication, address translation, statistics and encryption.

Managing Firewall Operation

A *firewall* is the hardware and/or software that limits the exposure of a computer or network to an invasion from an external source. To control the operation of the firewall on the router, you use the Check Point FireWall-1 management software.

You install this management software on either a computer running Windows NT or on a UNIX workstation to create a *firewall management station*. From the management station, you can use the FireWall-1 management software to define a security policy and download it to the router. The *security policy* specifies how the firewall operates. For instructions on how to install the FireWall-1 management software, see Chapter 2, “Installing FireWall-1 Management Software.” To learn how to configure a security policy, see your Check Point documentation.

How the Firewall Software Works

The stateful inspection module in the Bay Networks router software inspects all data packets traveling between the data link and network layers and communicates the results to the management station. If the data packets meet the security requirements specified in the security policy, the router forwards the data. If the data packets violate the security policy, the router drops the data packets, and logs the information to the management station.

Where You Should Go from Here

To get a firewall up and running on your Bay Networks router:

For information on how to	Go to page
Obtain licenses from Check Point	2-1
Install the Check Point Management software	2-5
Create a firewall	3-1
Enable the firewall on the router	3-4
Establish a relationship between the management station and the router	3-4
Enable the router on specific interfaces	3-6
Activate the firewall	3-9
Configure a firewall security policy	3-11 and see your Check Point FireWall-1 documentation
Install the security policy on the router	3-11 and see your Check Point FireWall-1 documentation

Chapter 2
Installing FireWall-1 Management Software

To install the FireWall-1 software, see the following sections:

Topic	Page
Obtaining Software Licenses	2-1
Installing and Running the FireWall-1 Management Software	2-5

Obtaining Software Licenses

Before you can install the FireWall-1 software and create a firewall on the router, you must first obtain a permanent software license from Check Point Software Technologies for:

- The firewall management station

  You need one software license for the firewall management station, a PC or UNIX workstation used to manage the firewall software on the Bay Networks router.

- The router

  You need one software license for each Bay Networks router protected by the firewall software.

Obtaining a FireWall-1 License for the Management Station

To obtain a FireWall-1 license for the firewall management station, follow these instructions:

Note: You need one license for each FireWall-1 management station. To obtain a license for each additional management station, you must repeat the steps outlined in this section.

1. **Locate your certificate key.**

   A certificate key (serial number) is located on a sticker on the inside of the CD folder containing the Check Point FireWall-1 management software media. If you lose the certificate key bearing the FireWall-1 serial number, contact Bay Networks.

2. **Contact Check Point Software Technologies.**

   To obtain a permanent license, you must contact Check Point with your certificate key information. You can reach Check Point in any of these ways:

   - Via the World Wide Web at *http://license.CheckPoint.com*
   - By sending mail to license@checkpoint.com
   - By phoning Check Point:

     800-429-4391 (North America)

     +972-3-613-1833 (outside North America)

   When requesting a license, you must also be prepared to provide the IP address of the management station on which you plan to install the license.

Sample Response from Check Point

```
Your license request with the following details has been accepted.
Below you will find the corresponding license string.

We recommend printing this page and saving it in your files for
  future
reference.

Request Details
---------------
Certificate Key:    5xxx 5xxx fxxx
Customer Name:      Bay Networks
Product:            CPFW-ESC-U
Version:            3.0
Host ID:            123.123.123.123

License(s) Issued
-----------------
Host ID:            123.123.123.123
Features:           control
License String:     7xxxxxxx-8xxxxxxx-fxxxxxxx

License(s) Installation
-----------------------
run 'fw putlic 123.123.123.123 7xxxxxxx-8xxxxxxx-fxxxxxxx control
  '

Contact Information
-------------------
This Check Point product has been purchased through: Bay Networks
```

Note: If you need to change the IP address of the FireWall-1 management station, contact Check Point at 800-429-4391 (North America) or +972-3-613-1833 (locations outside of North America).

For information about how to install the license, refer to the section "Installing and Running the FireWall-1 Management Software" on page 2-5 and the Check Point FireWall-1 documentation.

Obtaining a FireWall-1 License for the Router

To obtain a FireWall-1 license for a router you plan to protect with a firewall, follow these instructions:

Note: You need one license for each router that you plan to protect with a firewall. To obtain a license for each additional router, you must repeat the steps outlined in this section.

1. **Locate your certificate key.**

   A certificate key (serial number) is located on a sticker on the inside of the CD folder containing the Check Point FireWall-1 software media. If you lose the certificate key bearing the FireWall-1 serial number, contact Bay Networks.

2. **Contact Check Point Software Technologies.**

   To obtain a permanent license, you must contact Check Point. To process your request, Check Point requires your certificate key and the IP address of the router you plan to protect with a firewall.

   You can reach Check Point in any of these ways:

   - Via the World Wide Web at *http://license.CheckPoint.com*
   - By sending mail to license@checkpoint.com
   - By phoning Check Point:

     800-429-4391 (North America)

     +972-3-613-1833 (outside North America)

   To synchronize the FireWall-1 password on the router and the management station, use the **fw putkey** command. See "Synchronizing the Management Station and the Router Passwords" on page 2-19.

Sample Response from Check Point

```
The following license was generated:
We recommend printing this page and saving it in your files for
future reference.

Request Details
---------------
Certificate Key:    7xxx dxxx 1xxx
Customer Name:      Bay Networks
Product:            BABN-IM-U
Version:            3.0
Host ID:            012.012.012.012

License Issued
--------------
Host ID:            012.012.012.012
Features:           embedul
License String:     7fff6161-408d3b21-a161c10f

License Installation
--------------------
run 'fw putlic 012.012.012.012 7fff6161-408d3b21-a161c10f
embedul '
```

Installing and Running the FireWall-1 Management Software

Once you obtain a FireWall-1 license from Check Point, you can install the Check Point FireWall-1 management software on a computer running either Windows NT or UNIX.

Installing on a Computer Running Windows NT

Use the following sections as a guide to installing the FireWall-1 management software on a computer running Windows NT. For more details, refer to your Check Point FireWall-1 documentation.

Sample Installation

The following sample installation takes the Check Point FireWall-1 software from a CD and installs it onto a PC running Windows NT. Use this sample installation to familiarize yourself with a basic FireWall-1 installation.

Note: This sample installation shows only those screens necessary for a basic installation.

Installing the Management Software

1. **Insert the CD into the CD-ROM drive and run the Setup program, *setup.exe*. To specify the name and location of the program to run, type (where D is the name of your CD-ROM drive):**

   `D:\windows\fw1\setup.exe`

   The Choose Destination Location window (Figure 2-1) opens.

Choose Destination Location
Setup will install FireWall-1 in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install FireWall-1 by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\CheckPoint\FireWall-1\
Browse...
< Back
Next >
Cancel

Figure 2-1. Choose Destination Location Window

2. **Choose a destination directory. You can either accept the default directory (Program Files) or make another selection.**
3. **Click on Next.**

The Selecting Product Type window (Figure 2-2) opens.

Selecting Product Type
Please specify the FireWall-1 Product Type you are about to install:
FireWall-1 Enterprise Product
FireWall-1 Single Gateway Product
FireWall-1 Enterprise Management Product
FireWall-1 FireWall Module
FireWall-1 Inspection Module
< Back
Next >
Cancel

Figure 2-2. Selecting Product Type Window

4. **Choose the FireWall-1 component you want to install. To be compatible with BaySecure FireWall-1, choose FireWall-1 Enterprise Management Console Product.**

5. **Click on Next.**

   The Licenses window (Figure 2-3) opens.

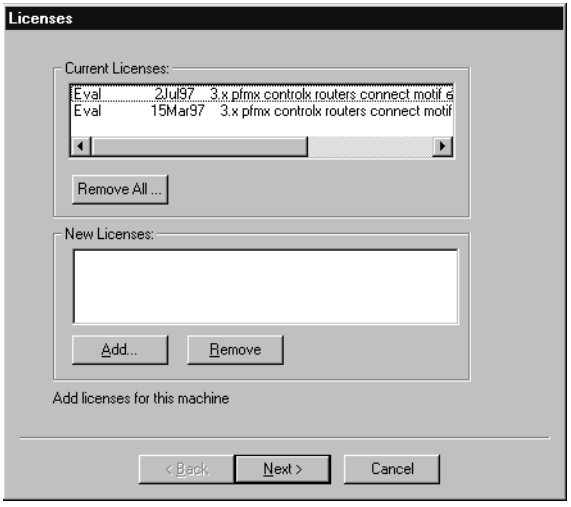

Figure 2-3. Licenses Window

6. **Enter the license information you obtained from Check Point.**

7. **Click on Next.**

   The Administrators window (Figure 2-4) opens.

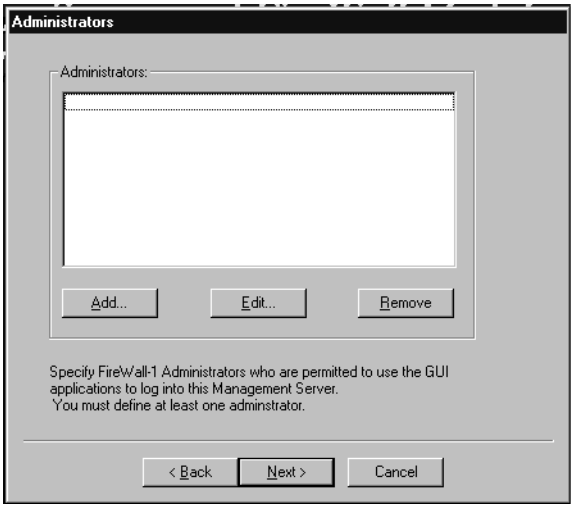

Figure 2-4. Administrators Window

You must specify at least one administrator.

8. **Click on Add.**

   The Add Administrator window (Figure 2-5) opens.

Figure 2-5. Add Administrators Window

9. **Enter the administrator's user name and password, which is limited to eight characters, and a password confirmation, and click on OK. You return to the Administrators window.**

10. **Click on Next.**

    The GUI Clients window opens. Do not enter any GUI clients at this time.

11. **Click on Next.**

    The Remote Modules window appears. Do not enter any remote modules at this time.

12. **Click on Next.**

    The Key Hit Session window (Figure 2-6) opens.

Key Hit Session
In order to generate random seed for the cryptographic processes of FireWall-1, please enter some random text of at least 6 different keys until you hear the beep and the bar is full.
Note: Strokes that are too fast or too similar to the predecessor strokes, are ignored.
Random Characters:
< Back
Next >
Cancel

Figure 2-6. Key Hit Session Window

13. **Follow the directions in the window and enter random characters, with a delay of a few seconds between them, until the indicator bar is full.**

    Be sure not to type the same character twice in a row to vary the delay between the characters.

14. **Click on Next.**

    The CA Key window opens.

15. **Click on Generate to generate a new key.**

    The host uses the RSA key to generate a digital signal for authenticating its communications in its capacity as a Certificate Authority.

    Generating the key may take several minutes.

16. **Click on Finish.**

Installing the GUI Client

1. **Insert the CD into the CD-ROM drive and run the *setup.exe* file. To specify the name and location of the program to run, type (where D is the name of your CD-ROM drive):**

   `D:\windows\gui_client\disk1\setup.exe`

   The Choose Destination Location window (Figure 2-7) opens.

2. **Choose a destination directory.**

Choose Destination Location
Setup will install FireWall-1 in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install FireWall-1 by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\CheckPoint\FireWall-1\
Browse...
< Back
Next >
Cancel

Figure 2-7. Choose Destination Location Window

You can either accept the default directory (Program Files) or make another selection.

3. **Click on Next.**

   The Select Components window (Figure 2-8) opens.

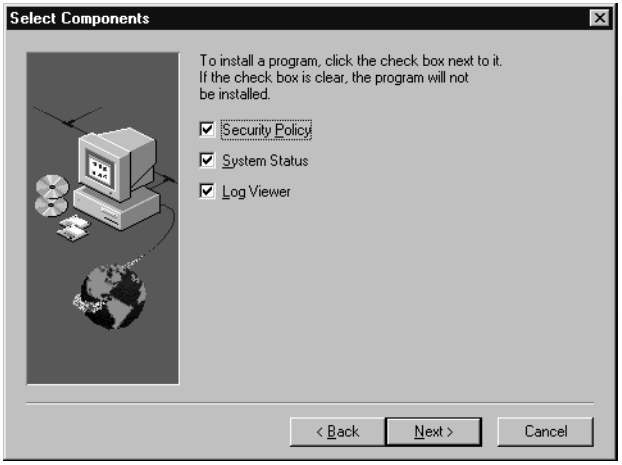
Select Components
To install a program, click the check box next to it. If the check box is clear, the program will not be installed.
Security Policy
System Status
Log Viewer
< Back
Next >
Cancel

Figure 2-8. Select Components Window

4. **Install the Security Policy, System Status, and Log Viewer components by clicking on each item.**

Customizing the FireWall-1 Installation

You can customize your FireWall-1 installation by running the *FireWall-1 Configuration* file.

To execute the file, enter:

`D:\Start\Programs\FireWall-1\FireWall-1 Configuration`

Using the *FireWall-1 Configuration* file, you can add:

- A license
- Administrators
- GUI clients
- Remote modules
- CA keys

For more information, refer to your Check Point documentation.

Installing on a UNIX Platform

Use the following sections as a guide to installing the FireWall-1 software on a computer running UNIX. For more details, refer to your Check Point FireWall-1 documentation.

Before You Install

Before you attempt to install the Check Point FireWall-1 software, be sure that you have completed these tasks:

- Obtain a FireWall-1 license for each firewall management station and router that you plan to protect with a firewall.
- Add **setenv FWDIR/etc/fw** to your *.cshrc* file, oradd**FWDIR=/etc/fw**toyour.*cshrc*fileand,ifusingthekornshell,**exportFWDIR** to your *.profile* file; if using the c shell, **setenv FWDIR** to your *.profile* file.
- Add **/etc/fw/bin** to your path
- Add **/etc/fw/man** to your MANPATH environment

Mounting the CD and Extracting the Tar File

Check Point distributes its FireWall-1 software on CD-ROM. You must supply the UNIX commands to mount the CD drive and extract the tar files.

The commands to mount a CD drive and extract the tar files vary depending on the device name of the CD drive, the operating system used, and other environmental factors. Use the instructions that follow only as guidelines for mounting the CD drive and extracting the tar files. The commands you need may differ.

For SunOS

```
lab#  mount -r -t hsfs /dev/sr0 /cdrom
lab#  cd /tmp
lab#  tar xvf /cdrom/sunos4/fw1/fw.sunos4.tar
```

For Solaris

```
lab#  mount -F hsfs -r /dev/sr0 /cdrom
lab#  cd /tmp
lab#  tar xvf /cdrom/solaris2/fw1/fw.solaris2.tar
```

For HPUX

```
lab#  mount -r /dev/dsk/c1t2d0 (or your specific CD-ROM address)  /cdrom
```

```
lab#  cd /tmp
lab#  tar xvf  "/cdrom/HPUX/FW1/FW.HPUX.TAR;1"
```

Installing the Check Point FireWall-1 Software

Once you have extracted the Check Point FireWall-1 files, you can install the management software. To install the software, change directories so that you're in the directory where you put the extracted files and then issue the **fwinstall** command.

For example, if you extracted the files into your */tmp* directory, install the software by issuing the following commands:

```
lab#  cd /tmp
lab#  ./fwinstall
```

Installation Options

Note that during the installation, the script asks you to select the FireWall-1 option you want to install. To be compatible with BaySecure FireWall-1, enter selection 3, FireWall-1 Enterprise Management Console Product. A sample follows.

```
Which of the following FireWall-1 options do you wish to install?

(1) FireWall-1 Enterprise Product
(2) FireWall-1 Single Gateway Product
(3) FireWall-1 Enterprise Management Console Product
(4) FireWall-1 FireWall Module
(5) FireWall-1 Inspection Module

Enter your selection (1-7/a): 3
```

Sample Installation

The following sample installation takes the Check Point FireWall-1 software from a CD-ROM and installs it onto a SparcStation running SunOS. Use this sample installation to familiarize yourself with the FireWall-1 installation script.

Note: In the following sample installation, all user input is in **bold**.

```
*************** FireWall-1 v3.0 Installation ***************

Reading fwinstall configuration.  This might take a while.
```

```
Please wait.

Configuration loaded.  Running FireWall-1 Setup.

Checking available options. Please wait.....................

Which of the following FireWall-1 options do you wish to install/
configure ?
------------------------------------------------------------------
-----
(1) FireWall-1 Enterprise Product
(2) FireWall-1 Single Gateway Product
(3) FireWall-1 Enterprise Management Console Product
(4) FireWall-1 FireWall Module
(5) FireWall-1 Inspection Module

Enter your selection (1-5/a): 3

Installing/Configuring FireWall-1 Enterprise Management Console
Product.

Please wait...

Selecting where to install FireWall-1
-------------------------------------
FireWall-1 requires approximately 9017 KB of free disk space.
Additional space is recommended for logging information.

Enter destination directory [/etc/fw]): <RETURN>

Checking disk space availability...

Installing FW under /etc/fw (50836 KB free)
Are you sure (y/n) [y] ? y

Software distribution extraction
--------------------------------
Extracting software distribution. Please wait ...
Software Distribution Extracted to /etc/fw
Installing license
------------------
Reading pre-installed license file fw.LICENSE... done.
```

```
The following evaluation License key is provided with this
FireWall-1 distribution
Eval            15Mar97    3.x pfmx controlx routers connect motif

Do you want to use this evaluation FW-1 license (y/n) [y]? n

Do you wish to start FireWall-1 automatically from /etc/rc.local
(y/n) [y] ? n


Welcome to FireWall-1 Configuration Program
===========================================
This program will guide you through several steps where you
will define your FireWall-1 configuration. In any later time,
you can reconfigure these parameters by running fwconfig


Configuring Licenses...
=======================
The following licenses are installed on this host:
Eval            15Mar97    3.x pfmx controlx routers connect motif

Do you want to add licenses (y/n) [n] ? n

Configuring Administrators...
=============================
No FireWall-1 Administrators are currently defined for this
Management Station.

Do you want to add users (y/n) [y] ? n


Configuring GUI clients...
==========================
GUI clients are trusted hosts from which FireWall-1 Administrators
are
allowed to log on to this Management Station using Windows/X-Motif
GUI.

Do you want to add GUI clients (y/n) [y] ? n

Configuring Remote Modules...
=============================
Remote Modules are FireWall or Inspection Modules that are going
to be controlled by this Management Station.

Do you want to add Remote Modules (y/n) [y] ? n
```

```
Configuring Groups...
=====================
FireWall-1 access and execution permissions
-------------------------------------------
Usually, FireWall-1 is given group permission for access and
execution.
You may now name such a group or instruct the installation
procedure
to give no group permissions to FireWall-1. In the latter case,
only the
Super-User will be able to access and execute FireWall-1.

Please specify group name [<RET> for no group permissions]:

No group permissions will be granted. Is this ok (y/n) [y] ? y

Configuring Random Pool...
==========================
You are now asked to perform a short random keystroke session.
The random data collected in this session will be used for
generating Certificate Authority RSA keys.

Please enter random text containing at least six different
characters. You will see the '*' symbol after keystrokes that
are too fast or too similar to preceding keystrokes. These
keystrokes will be ignored.

Please keep typing until you hear the beep and the bar is full.

    [                   ] *

Thank you.

Configuring CA Keys...
======================
fw: no license for 'ca'
The installation procedure is now creating an FWZ Certificate
Authority Key
for this host. This can take several minutes. Please wait...
fw: no license for 'ca'

Configuration ended successfully

*************** FireWall-1 is now installed. ***************

Do you wish to start FW-1 now (y/n) [y] ? n
*****************************************************************
*
```

```
Configuration ended successfully

*************** FireWall-1 is now installed. ***************

Do you wish to start FW-1 now (y/n) [y] ? n

*****************************************************************
*
                DO NOT FORGET TO:
1. add the line:    setenv FWDIR /etc/fw   to .cshrc
                or  FWDIR=/etc/fw; export FWDIR to .profile
2. add  /etc/fw/bin  to path
3. add  /etc/fw/man  to MANPATH environment
*****************************************************************
*

You may configure FireWall-1 anytime, by running fwconfig.

*************** Installation completed successfully
***************
```

Customizing the FireWall-1 Installation

You can use the **fwconfig** command to customize your FireWall-1 installation. Using **fwconfig**, you can add or remove:

- A license
- Administrators
- Groups
- GUI clients
- Remote modules
- CA keys

Note: To add an administrator, you must first add a group to which the user is a member. If you do not add a group, then you can run the GUI using only the **fwui** command if you are logged in as root.

For further details, refer to your Check Point FireWall-1 documentation.

Installing a License on the Management Station

To install a license on the firewall management station, use the following command:

fw putlic *<hostid>* *<lic_string>* **pfmx controlx routers motif embedded**

The *<hostid>* is the host ID of the management station.

The *<lic_string>* is a string of alphanumeric characters that Check Point provides with your FireWall-1 license.

Starting and Stopping the FireWall-1 Daemons

To start the FireWall-1 daemons, use the **fwstart** command. For example, at the system prompt, type:

```
lab# fwstart
```

To stop the FireWall-1 daemons, use the **fwstart** command. For example, at the system prompt, type:

```
lab# fwstop
```

Synchronizing the Management Station and the Router Passwords

Once you have installed licenses on the firewall management station and the router, you must synchronize your password on the two systems. To synchronize the router and the management station passwords, enter the following commands:

- On the firewall management station:

  fw putkey -p*<password>* *<ip_address_fwall_router>*

- On the router:

  fwputkey <*password>* *<ip_address_mgmt_station>*

where	is
<password>	A string of alphanumeric characters that specifies your password
<ip_address_fwall_router>	The IP address of your firewalled router
<ip_address_mgmt_station>	The IP address of your FireWall-1 GUI management station

Starting FireWall-1

To start FireWall-1, enter the **fwui&** command. For example, at the system prompt, type

```
lab# fwui&
```

Optionally, you can use the FireWall-1 XMotif GUI. For instructions on how to install and start the XMotif GUI, see you Check Point documentation.

Chapter 3
Configuring a Firewall on a Router

To configure a firewall on the router, see the following topics:

Topic	Page
Creating a Firewall on the Router	3-1
Enabling or Disabling the Firewall on the Router	3-4
Setting Up Communications Between the Firewall Management Station and the Router	3-4
Enabling the Firewall on Router Interfaces	3-6
Activating the Firewall	3-9
Defining a Firewall Security Policy	3-11
Installing the Security Policy on the Router and Its Interfaces	3-11
Deleting Firewall from the Router	3-12
Troubleshooting Checklist	3-14

Creating a Firewall on the Router

This section explains how to create a firewall on a Bay Networks router using Site Manager.

You can also use the Technician Interface, which lets you modify parameters by issuing **set** and **commit** commands that specify the MIB object ID. This process is equivalent to modifying parameters using Site Manager. For more information about using the Technician Interface to access the MIB, refer to *Using Technician Interface Software*.

Caution: Unlike using Site Manager, the Technician Interface does not verify that the value you enter for a parameter is valid. Entering an invalid value can corrupt your configuration.

Before You Begin

Before you begin, you must first configure and enable IP on the router and enable TCP on all slots on the router. For instructions, see *Quick-Starting Routers*.

Using Site Manager

Begin by starting Site Manager. Then follow these steps:

1. **Select Configuration Manager in either local, remote, or dynamic mode from the Tools menu.**

   The Configuration Manager window opens (Figure 3-1).

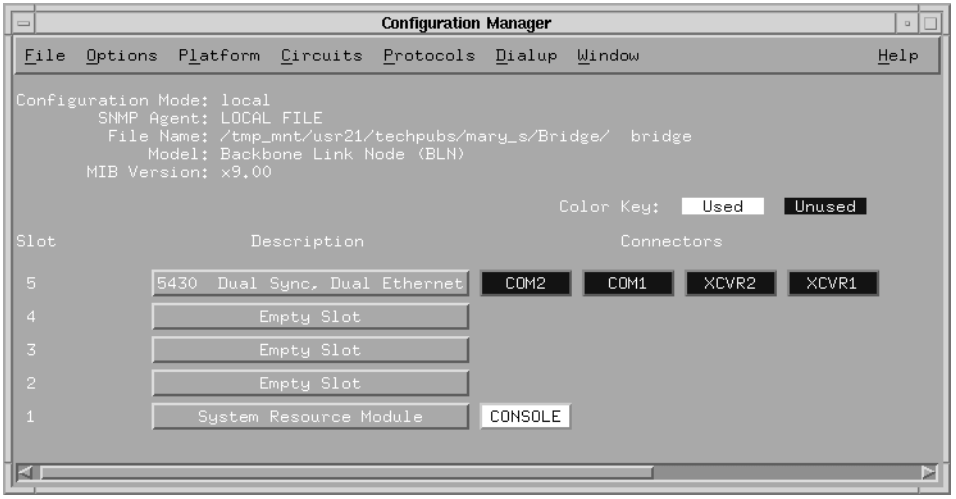

Figure 3-1. Configuration Manager Window

2. **If local or remote mode is selected, open a configuration file.**
3. **Create a firewall:**

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Platform**.	The Platform menu opens.
2. Choose **FireWall**.	The FireWall menu opens.
3. Choose **Create**.	A dialog box opens. See Figure 3-2.
4. Click on **OK**	You return to the Configuration Manager window.

By default, the firewall is automatically enabled on the router. To change this status, see "Enabling or Disabling the Firewall on the Router" on page 3-4.

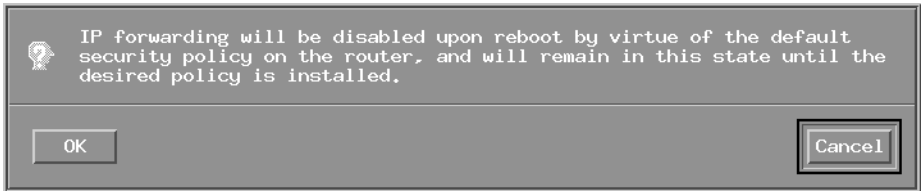
IP forwarding will be disabled upon reboot by virtue of the default security policy on the router, and will remain in this state until the desired policy is installed.
OK
Cancel

Figure 3-2. Create Firewall Dialog Box

Enabling or Disabling the Firewall on the Router

Note: When you first create a firewall, it is enabled by default.

To enable or disable the firewall on the router:

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Platform.**	The Platform menu opens.
2. Choose **FireWall**.	The FireWall menu opens.
3. Choose **Global.**	The FireWall Enable window opens.
4. Set the **Enable** parameter. Click on **Help** or see the parameter description on page A-1.	
5. Click on **OK**.	You return to the Configuration Manager window.

Setting Up Communications Between the Firewall Management Station and the Router

The firewall cannot protect your router until you set up communications between the firewall management station and the router.

To establish this relationship, you must use the same IP address you used to obtain FireWall-1 licenses for the firewall management station and the router.

Establishing the Firewall Management Station

The firewall management station is the PC or UNIX workstation where you installed the FireWall-1 software. You use the firewall management station to enforce the firewall security policy that you created for the router. The management station also logs all attempted violations of the security policy. (To define a security policy, see "Defining a Firewall Security Policy" on page 3-11. You will also need to consult your Check Point FireWall-1 documentation.)

To identify the management station to the router:

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Platform**.	The Platform menu opens.
2. Choose **FireWal**l.	The FireWall menu opens.
3. Choose **FireWall Parameters**.	
4. Set the **Log Host IP Address** parameter. Click on **Help** or see the parameter description on page A-2.	
5. Click on **OK**.	You return to the Configuration Manager window.

Establishing a Static Route

You may need to establish a static route between the router and the management station before you configure the parameters. By default, FireWall-1 filters in-bound routing protocol packets from RIP or OSPF. Therefore, if your router and firewall management station are on different subnets, you will need to establish a static route on the router, pointing to the management station's subnet; otherwise, your management station will be unable to communicate with the router. For information about creating a static route, see *Configuring IP Services.*

Identifying the Router

To identify the router protected by the firewall:

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Platform**.	The Platform menu opens.
2. Choose **FireWall**.	The FireWall menu opens.
3. Choose **FireWall Parameters**.	The FireWall Parameters window opens.

Site Manager Procedure *(continued)*	
You do this	**System responds**
4. Set the **Local Interface IP Address** parameter. Click on **Help** or see the parameter description on page A-3.	
5. Click on **OK**.	You return to the Configuration Manager window.

Enabling the Firewall on Router Interfaces

After you have created a firewall on the router, you can enable it on one or more interfaces.

To enable a firewall on router interfaces:

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Protocols**.	The Protocols menu opens.
2. Choose **IP.**	The IP menu opens.
3. Choose **FIREWALL**.	The List FireWall Interfaces window opens. See Figure 3-3.
4. Click on **Add**.	The Values window opens. See Figure 3-4.
5. Click on **All** to display all router interfaces or choose a *connection button* to display router interfaces by connection type.	Site Manager lists the interfaces at the top of the screen.
6. Click on **Check All** to highlight all listed interfaces, or highlight individual interfaces.	
7. Click on **OK**.	Site Manager returns you to the List FireWall Interfaces window. See Figure 3-3.
8. Set the FireWall **Name** parameter for the highlighted interface. Click on Help or see the parameter description on page A-4.	

Site Manager Procedure *(continued)*	
You do this	**System responds**
9. Set the **Disable** parameter. Click on **Help** or see the parameter description on page A-4.	
10. Click on Done.	You return to the Configuration Manager window.

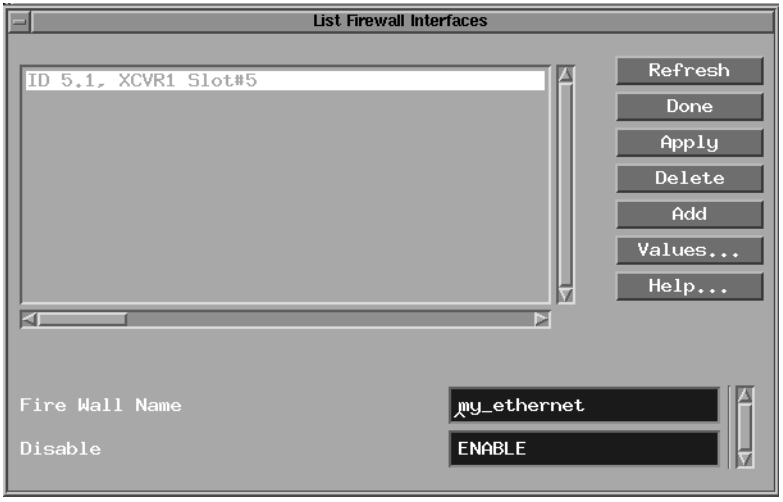

Figure 3-3. List Firewall Interfaces Window

Note: Once the firewall is protecting your router, if you put firewall protection on a new interface, the new interface will use the default security policy supplied by Check Point, which prevents the new interface from communicating with the router.

You can download your customized security policy to the new interface using the Check Point FireWall-1 command line. You can also use the Check Point FireWall-1 graphical user interface (GUI) download the security policy. The GUI, however, downloads the same security policy to all interfaces. For further information and instructions, see your Check Point documentation.

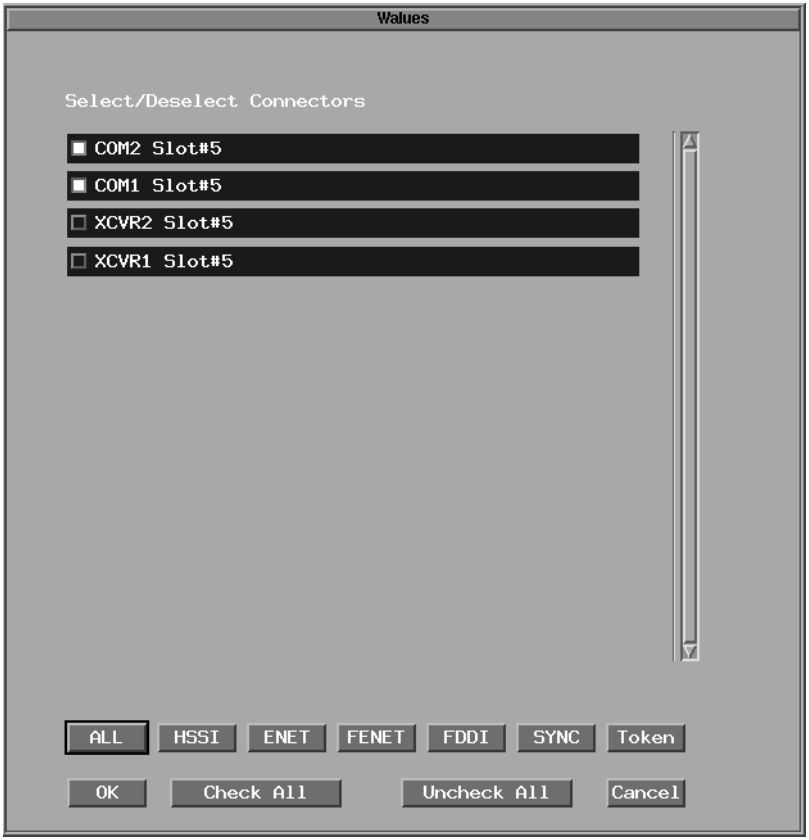

Figure 3-4. Values Window

Once you enable the firewall on an interface and reboot the router, you will not be able to communicate with the router through Site Manager until you change the FireWall-1 default security policy. For more information, see "Defining a Firewall Security Policy" on page 3-11.

Caution: If your firewall management station and router are on different subnets, you will not be able to communicate with the router from the management station unless you establish a static route from the management station to the router before you activate the firewall. For information about creating a static route, see *Configuring IP Services*.

Activating the Firewall

Before the FireWall-1 security policy can take effect on the router, you must first activate the firewall by booting the router using Site Manager on the management station. Booting a router warm-starts every processor module in the router. Pressing the Reset button on the front panel of the router performs the same procedure.

Note: When you activate the firewall, the default security policy prevents all interfaces supported by the firewall from communicating with the router. If the firewalled router and management station are on different subnets, you must establish a static route to enable communication between the router and the management station before you activate the firewall. For information about configuring a static route, see *Configuring IP Services.*

To reboot the router using Site Manager:

1. **From the main Site Manager window, select Administration > Boot Router.**

   The Boot Router window opens (Figure 3-5).

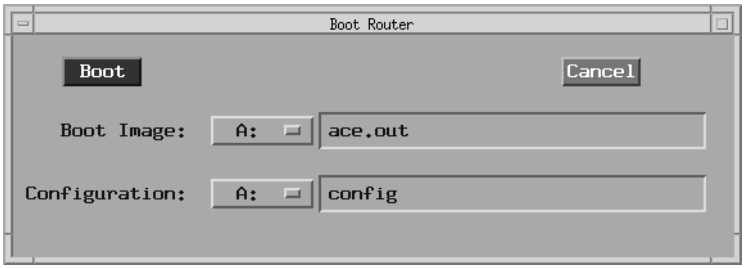

Figure 3-5. Boot Router Window

2. **Specify the correct volume and boot image.**
3. **Select the correct router volume and configuration file. Then click on Boot.**

   A confirmation window appears.

4. **Click on OK in the confirmation window and wait a few minutes to give the router time to reboot.**
5. **Select View > Refresh Display from the main Site Manager window to verify that the router booted correctly.**

If the router booted correctly, system information appears in the main Site Manager window.

If the router did not boot correctly, system information does not appear. In this case, make sure that you followed the procedures described in this section.

If you have any questions, refer to *Configuring and Managing Routers with Site Manager* or call your local Bay Networks Technical Solutions Center.

Defining a Firewall Security Policy

A *security policy* is a collection of rules that define the way the firewall operates. The default FireWall-1 security policy drops all attempts at communication with the router. This security policy goes into effect when you first activate the firewall on the router.

You must establish a security policy that explicitly defines acceptable communication to the router, based on the source address, destination address, and type of service. For details about how to configure a security policy, see your Check Point FireWall-1 documentation.

Installing the Security Policy on the Router and Its Interfaces

Once you have defined a security policy, you must install it on the router. Installing a security policy means downloading it to the firewalled objects that will enforce it.

When you download the security policy, the FireWall-1 software:

- Verifies that the rule base is logical and consistent
- Generates an inspection script from the rule base
- Compiles the inspection script to generate inspection code for the router
- Downloads the inspection code to the router

Note: Once the firewall is protecting your router, if you put firewall protection on a new interface, the new interface will use the default security policy supplied by Check Point, which prevents the new interface from communicating with the router.

You can download your customized security policy to the new interface using either the Check Point FireWall-1 command line or the Check Point FireWall-1 graphical user interface (GUI). The GUI, however, downloads the same security policy to all interfaces.

For instructions on how to install the security policy, see your Check Point FireWall-1 documentation.

Deleting Firewall from the Router

You can use Site Manager to delete a firewall from the router. To dynamically delete a firewall from the router, you must use the Technician Interface.

Deleting Firewall Locally or Remotely Using Site Manager

Site Manager allows you to delete a firewall from the entire router in local and remote modes only.

To delete a firewall:

Site Manager Procedure	
You do this	**System responds**
1. From Configuration Manager, choose **Platform**.	The Platform menu opens.
2. Choose **FireWall**.	The FireWall menu opens.
3. Choose **Delete**.	A dialog box opens, asking if you are sure that you want to delete the firewall.
4. Click on **OK**	You return to the Configuration Manager window.

Warning: Deleting a firewall using Site Manager deletes the firewall management information base (MIB). This action disables firewall functionality on the router, but it does not affect internal resources that were originally allocated for the FireWall-1 application.

After you delete a firewall using Site Manager, you should save the configuration file and reboot the router to free internal resources. You can then reconfigure FireWall dynamically.

Deleting Firewall Dynamically Using the Technician Interface

To delete a firewall dynamically, you must use the Technician Interface. The Technician Interface allows you to delete a firewall on a slot/port basis, or from all ports on the router.

firewall delete [*<slot> <port>* | **_all**]

<slot> <port>	Deletes a firewall from a specific slot/port combination.
_all	Deletes a firewall from the router entirely.

Warning: The **firewall delete all** command deletes the MIB. This action disables the FireWall functionality on the router, but it does not affect internal resources that were originally allocated for the FireWall-1 application.

After using the **firewall delete all** command, you should save the configuration file and reboot the router to free internal resources. You can then reconfigure FireWall dynamically.

Troubleshooting Checklist

If you experience problems with FireWall-1, verify that you have performed these steps:

- Enabled IP on the router
- Enabled TCP on all slots on the router
- Created a firewall using Site Manager
- Created a static route if the router and firewall management stations are on different subnets
- Synchronized the router and management station passwords by executing the **fwputkey** command on both the router and the firewall management station
- Defined a security policy and added a network object for the router using the FireWall-1 GUI
- Saved the configuration and booted the router
- Installed the security policy on the router

If you have performed these steps and are still having system problems, contact your Bay Networks Technical Solutions Center.

Appendix A
Parameter Descriptions

This appendix contains parameter descriptions for BaySecure FireWall-1 parameters.

FireWall Enable Parameter

Parameter: **Enable**

Path: **Platform > FireWall > Global**

Default: Enable

Options: Enable | Disable

Function: Enables or disables the firewall on the entire router.

Instructions: Choose Enable to allow the firewall to be active on the router. Choose Disable to disable the firewall on the router.

FireWall Parameters

Parameter: **Log Host IP Address**

Path: **Platform > FireWall > FireWall Parameters**

Default: 0.0.0.0

Options: Any valid IP address.

Function: Identifies the IP address of the primary firewall management station.

Instructions: Enter the IP address of the PC or UNIX workstation where you installed the Check Point FireWall-1 management software. If you have installed FireWall-1 management software on more than one PC or UNIX workstation, enter in the IP address of the workstation you plan to use as your primary FireWall-1 management station.

If the IP address of the management station and the IP address of the router are on different subnets, then you must configure a static route to the router to enable communication between the router and the management station. *Configuring IP Services* provides information about configuring a static route.

Parameter: **Local Interface IP Address**

Path: **Platform > FireWall > FireWall Parameters**

Default: 0.0.0.0

Options: Any valid IP address.

Function: Identifies the IP address of the router to be protected by the firewall.

Instructions: Enter the IP address of the router you intend to have protected by the firewall.

If the IP address of the firewall management station and the IP address of the router are on different subnets, then you must configure a static route to the local host IP address to enable communication between the router and the firewall management station. *Configuring IP Services* provides information about configuring a static route.

List FireWall Interfaces Parameters

Parameter: **Name**

Path: **Protocols > IP > FIREWALL**

Default: None

Options: Any string of alphanumeric characters.

Function: Identifies an interface by name.

Instructions: Enter a meaningful name in alphanumeric characters.

Parameter: **Disable**

Path: **Protocols > IP > FIREWALL**

Default: Disable

Options: Enable | Disable

Function: Enables or disables the firewall on one or more interfaces.

Instructions: Highlight one or more interfaces and choose Enable to allow the firewall to be active on the interfaces. Choose Disable to deactivate the firewall on the interfaces.

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